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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ROBERT ALAN COCHRAN and MARCEL DUVEKOT

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Appeal 2009-008037  
Application 10/798,962<sup>1</sup>  
Technology Center 2100

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*Before* JAY P. LUCAS, JOHN A. JEFFERY, and JAMES R. HUGHES,  
*Administrative Patent Judges.*

HUGHES, *Administrative Patent Judge.*

DECISION ON APPEAL

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<sup>1</sup> Application filed March 12, 2004. The real party in interest is Hewlett-Packard Development Co., LP. (App. Br. 2.)

## STATEMENT OF THE CASE

Appellants appeal from the Examiner's rejection of claims 1-32 under authority of 35 U.S.C. § 134(a). The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b).

We affirm.

### *Appellants' Invention*

The invention at issue on appeal relates to a redundant data storage arrangement and related data synchronization method in which the arrangement includes a primary storage entity and first and second remote storage, and the method mirrors data to the first and second remote storage entities and tracks writes to the first and second remote storage entities in respective first and second sidefiles. The method compares the first sidefile with the second sidefile and updates writes stored at the second remote storage entity based upon the comparison. (Spec. ¶ [0007].)<sup>2</sup>

### *Representative Claim*

Independent claim 1 further illustrates the invention and is reproduced below with the key disputed limitations emphasized:

1. A data synchronization method for a redundant data storage arrangement in which there are at least a primary storage entity and mirroring first and second remote storage entities in communication therewith, respectively, writes to the first and second remote storage entities being tracked via respective first and second sidefiles, the first and second storage entities having different levels of write-currency relative to each other, the method comprising:

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<sup>2</sup> We refer to Appellants' Specification ("Spec."); Appeal Brief ("App. Br.") filed June 10, 2008; and Reply Brief ("Reply Br.") filed November 7, 2008. We also refer to the Examiner's Answer ("Ans.") mailed September 8, 2008.

receiving acknowledgements from the second remote storage entity at both the primary storage entity and the first remote storage entity;

*comparing acknowledgements and sequence numbers in the first sidefile with acknowledgements and sequence numbers in the second sidefile; and*

updating writes stored at the second remote storage entity based upon the comparison of the first and second sidefiles.

### *References*

The Examiner relies on the following references as evidence in support of the rejections:

Harter	US 6,098,179	Aug. 1, 2000
McDowell	US 6,260,125 B1	Jul. 10, 2001
Carteau	US 2002/0083281 A1	Jun. 27, 2002
Iwamura	US 2005/0038968 A1	Feb. 17, 2005 (filed Oct. 2, 2003)
Frederick	US 6,912,483 B2	Jun. 28, 2005 (filed Feb. 28, 2002)

### *Rejections on Appeal*

1. The Examiner rejects claims 1-4, 6, 13-17, 19, and 26-32 under 35 USC § 103(a) as being unpatentable over the combination of Iwamura and Carteau.

2. The Examiner rejects claims 5 and 18 under 35 USC § 103(a) as being unpatentable over the combination of Iwamura, Carteau, and Frederick.

3. The Examiner rejects claims 7-9 and 20-22 under 35 USC § 103(a) as being unpatentable over the combination of Iwamura, Carteau, and McDowell.

4. The Examiner rejects claims 10-12 and 23-25 under 35 USC § 103(a) as being unpatentable over the combination of Iwamura, Carteau, and Harter.

### ISSUE

Based on our review of the administrative record, Appellants' contentions, and the Examiner's findings and conclusions, the pivotal issues before us are as follows:

1. Does the Examiner err in finding that the combination of Iwamura and Carteau would have taught or fairly suggested "comparing acknowledgements and sequence numbers in the first sidefile with acknowledgements and sequence numbers in the second sidefile" as recited in claim 1?

### FINDINGS OF FACT

We adopt the Examiner's findings in the Answer and Final Office Action as our own, except as to those findings that we expressly overturn or set aside in the Analysis that follows.

### ANALYSIS

Appellants argue independent claim 1 and present nominal arguments for each of independent claims 13 and 28-32. Appellants, however, simply reiterate the arguments made with respect to claim 1 for claims 13 and 28-32. (App. Br. 14-17.) Therefore, Appellants argue independent claims 1,

13, and 28-32 together as a group based on claim 1. Appellants do not present separate arguments for dependent claims 2-12 (dependent on claim 1) or 14-27 (dependent on claim 13). (App. Br. 14-18.) Consequently, we select independent claim 1 as representative of Appellants' arguments and groupings with respect to the Examiner's obviousness rejections. We have considered only those arguments that Appellants have actually raised in their Briefs. Arguments that Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the anticipation and obviousness rejections – the so-called “prima facie” case. *See In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984) (the United States Patent and Trademark Office (USPTO) has the initial burden of proof “to produce the factual basis for its rejection of an application under sections 102 and 103.” (quoting *In re Warner*, 379 F.2d 1011, 1016 (CCPA 1967))). “[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

Appellants have the opportunity on appeal to the BPAI to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (citing *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)). The Examiner sets forth a detailed explanation of a reasoned conclusion of obviousness in the Examiner's Answer with respect to each of Appellants' claims (Ans. 3-32) and, in particular, claim 1 (Ans. 3-6, 28-30). Therefore,

we look to the Appellants' Briefs to show error in the proffered findings and reasoned conclusions. *See Kahn*, 441 F.3d at 985-86.

*Arguments Concerning the Examiner's Rejection  
of Representative Claim 1 Under § 103*

The Examiner rejects claim 1 as being obvious over Iwamura and Carteau. (Ans. 3-6.) Specifically, the Examiner finds that Iwamura teaches two remote storages and storage logs (first and second remote storage entities with first and second sidefiles) (Ans. 3-4), as well as sequential IDs (sequence numbers) and comparing sequential IDs (determining a missing ID) (Ans. 4-5 (citing Iwamura ¶ [0236])). The Examiner also finds that Carteau teaches receiving acknowledgements from a (second) remote storage system at a primary storage system and a different (first) remote storage system. (Ans. 4-6 (citing Carteau ¶ [0027]).) The Examiner further provides a rationale for combining Iwamura and Carteau. (Ans. 5-6, 29-30.) The Examiner also explains that Appellants' arguments are not commensurate with the Examiner's interpretation of the disputed limitation of claim 1 and that Appellants cannot show non-obviousness of the reference combination by attacking the references individually. (Ans. 28-29.)

Appellants, on the other hand, contend that "Iwamura does not teach or suggest using acknowledgements as part of his rollback process for database recovery" and "Carteau does not teach or suggest using . . . acknowledgements as part of a process for database recovery." (App. Br. 14.) Specifically, Appellants contend that:

Iwamura uses logs based on time and mentions the use of continuous numbers as an alternative. Iwamura, though, never teaches or suggests comparing both acknowledgements and sequence numbers in one sidefile with acknowledgements and

sequence numbers in a second sidefile as recited in claim 1. Carteau discusses transmitting acknowledges, but never teaches or suggests comparing both acknowledgements and sequence numbers in one sidefile with acknowledgements and sequence numbers in a second sidefile as recited in claim 1.

The differences between the claims and the teachings in the art are great since the references fail to teach or suggest all of the claim elements. As such, the pending claims are not a predictable variation of the art to one of ordinary skill in the art.

(App. Br. 14-15.)

Based on the record before us, we do not find error in the Examiner's obviousness rejection of claim 1. We agree with the Examiner that the limitations of Appellants' claim recite "comparing acknowledgements and sequence numbers in the first sidefile with acknowledgements and sequence numbers in the second sidefile." (App. Br. 20, claim 1.) We also agree that Iwamura describes comparing sequential IDs in log files (Ans. 3-6), and Carteau describes sending acknowledges (acknowledgements) from a remote storage system (second remote storage entity) to another remote storage system (first remote storage entity) and a primary computer (primary storage entity). (Ans. 4-5.) We further agree with the Examiner's conclusion that it would have been obvious to one of ordinary skill in the art at the time of Appellants' invention to combine the teachings of Iwamura and Carteau. (Ans. 5-6, 29-30.)

Appellants do not dispute that Iwamura teaches comparing sequential IDs (sequence numbers) in a log of a first remote storage (the first sidefile) with sequential IDs in a second remote storage (the second sidefile) as the Examiner asserts. (See App. Br. 14-15, Reply Br. 2-3.) Appellants also do not dispute that Carteau teaches sending acknowledges (acknowledgements) from a second remote storage system to first remote storage system and a



sending computer (primary storage system) as the Examiner asserts. (*See* App. Br. 13-14, Reply Br. 2-3.)

Iwamura and Carteau both describe mirroring (writing) data to remote storage systems. (Ans. 5.) Therefore, we find Iwamura and Carteau are in the same field of endeavor and are analogous art. Thus, we conclude, as did the Examiner, that it would have been obvious to an ordinarily skilled artisan at the time of Appellants' invention to combine Iwamura and Carteau (Ans. 5-6, 29-30) because comparing Carteau's acknowledgements in conjunction with Iwamura's sequential IDs as taught by Iwamura is tantamount to the predictable use of prior art elements and techniques according to their established functions – an obvious improvement. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). We also find that the Examiner articulates a rationale – improved efficiency and functionality (ensuring a complete record of writes and ensuring complete resynchronization) – for combining Iwamura and Carteau (*see* Ans. 5-6, 29-30) based on “some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *Kahn*, 441 F.3d at 988).

“A person of ordinary skill is also a person of ordinary creativity, not an automaton” – “[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.” *KSR*, 550 U.S. at 421. “Common sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents

together like pieces of a puzzle.” *Id.* at 420. *See Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007). It is well settled that “factfinders may use common sense in addition to record evidence” to determine the legal issue of obviousness. *Perfect Web Tech., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1329 (Fed. Cir. 2009).

A person of ordinary skill in the art would have had good reason to pursue the known options (comparing data as taught by Iwamura, in this instance additional data – the acknowledges/acknowledgements taught by Carteau) for improving remote copy (mirroring) systems, as taught by Iwamura, which would require no more than “ordinary skill and common sense.” *KSR*, 550 U.S. at 421. Appellants have presented no evidence that pursuing a known option such as comparing additional data “was uniquely challenging or difficult for one of ordinary skill in the art.” *Leapfrog*, 485 F.3d at 1162. Further, we find that a person of ordinary skill would have perceived a reasonable expectation of success in the combination of these elements of the prior art. *See In re O’Farrell*, 853 F.2d 894, 904 (Fed. Cir. 1988) (“For obviousness under § 103, all that is required is a reasonable expectation of success.”). Therefore, we conclude Iwamura and Carteau would have taught comparing sequential IDs as taught by Iwamura and also the acknowledgements taught by Carteau (i.e., an acknowledgement corresponding to a sequential ID in a log of a first remote storage with an acknowledgement corresponding to a sequential ID in a log of a second remote storage).

We find Appellants’ contrary arguments unpersuasive for several reasons. As explained by the Examiner, Appellants’ arguments are not commensurate with the scope of the claim limitations. (Ans. 28.) Also as

explained by the Examiner, Appellants attempt to attack each of the references individually. One cannot show non-obviousness of the reference combination by attacking the references individually. (Ans. 29.)

Additionally, although Appellants aver that the “differences between the claims and the teachings in the art are great” and the “claims are not a predictable variation” (App. Br. 15), they do not explain how comparing additional data is beyond the skill in the art (*supra*).

Thus, we find Iwamura and Carteau would have taught or fairly suggested the disputed claim limitation to one of ordinary skill in the art at the time of Appellants’ invention. It follows that Appellants do not persuade us of error in the Examiner’s obviousness rejection of claim 1. Appellants do not separately argue claims 2-32 (*supra*). Consequently, it follows that Appellants do not persuade us of error in the Examiner’s obviousness rejections of claims 2-32, and we affirm the Examiner’s rejections of claims 1-32 for the reasons above.

#### CONCLUSION OF LAW

Appellants have not shown that the Examiner erred in rejecting claims 1-32 under 35 U.S.C. § 103(a).

#### DECISION

We affirm the Examiner’s rejection of claims 1-32 under 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED